

Installation Note

Agilent E8267D PSG Signal Generators Upgrade Kit for Option 601 and 602 (Digital Bus Baseband Generator with 8 and 64 Msample Memory, respectively) Kit Part Numbers E8267DK-601 and E8267DK-602

NOTE For the latest revision of this installation note, go to the following website:
<http://www.agilent.com/find/psg>



Agilent Technologies

Part Number E8251-90388
Printed in USA August 2004



E8251-90388

Notice

The information contained in this document is subject to change without notice.

Agilent Technologies makes no warranty of any kind with regard to this material, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Agilent Technologies shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Digital Bus Baseband Generator Upgrade Kit

| | |
|--|--|
| Product Affected: | E8267D |
| Serial Numbers: | All |
| Options: | |
| To Be Performed By: | (X) Agilent Technologies Service Center (X) Personnel Qualified by Agilent Technologies (X) Customer |
| Estimated Installation Time: | 0.5 hours |
| Estimated Verification Time: | 1.0 hours |

Introduction

This upgrade kit adds the Digital Bus Baseband Generator with 8 or 64 Msample memory to the E8267D.

NOTE This upgrade kit is not compatible with Option 1EM (Rear Panel Output Connector). This kit requires a PC or UNIX computer with LAN, GPIB, or RS232 access.

Installation includes the following major steps, starting on [page 5](#):

1. Check signal generator functionality.
2. Initialize the signal generator memory.
3. Remove the outer and inner signal generator covers.
4. Replace the A14 Digital Bus Baseband Generator board.
5. Install the Digital Bus cable.
6. Verify proper installation of Option 601/602.
7. Re-assemble the signal generator.
8. Run the I/Q Calibration.
9. Verify signal generator calibration.

Installation Kit Parts List

| Item | Quantity | Description | Part Number |
|------|----------|---|-------------|
| 1 | 1 | Installation Note | E8251-90388 |
| 2 | 1 | W90 Digital Bus Cable | 8121-0690 |
| 3 | 1 | Hex Nut 15/21-32 (AUX I/O) | 2950-0035 |
| 4 | 1 | Washer .4721D (BNC) | 2190-0102 |
| 5 | 1 | A14 Digital Bus Baseband Generator 8/64 Msample | E4400-60744 |
| 6 | 1 | Entitlement Certificate | 5964-5143 |
| 7 | 1 | Entitlement Certificate Envelope | 5967-7169 |

Tools Required

- TORX T-10 driver
- TORX T-15 driver
- TORX T-20 driver
- 9/16" nut driver
- 5 mm nut driver
- 9/16" socket
- 5 mm socket
- Torque Wrench Ratchet (9-21 in-lb)
- Small Phillips screw driver
- Needle-nose pliers

Safety Considerations

WARNING

Before you disassemble the signal generator, turn the power switch off and unplug the power cord. Failure to unplug the signal generator can result in personal injury.

CAUTION

Electrostatic discharge (ESD) can damage or destroy electronic components. All work on electronic assemblies should be performed at a static-safe workstation.

Check Signal Generator Functionality

Use the following procedure to confirm that the signal generator powers up and the internal check identifies no errors. The internal check evaluates the operation of the signal generator and returns an error message if it detects a problem.

NOTE When the signal generator is first connected to ac line power, the error message **ERROR 514, Reference Oven Cold** occurs, which causes both the **OVEN COLD** annunciator and the **ERR** annunciator to turn on.

After approximately five minutes, the **OVEN COLD** annunciator automatically clears, but the **ERR** annunciator remains on until all errors are cleared from the error queue.

1. Turn on the signal generator and let it warm up for at least five minutes.
2. Run the signal generator self-test by pressing **Utility > Instrument Info/Help Mode > Self Test > Run Complete Self Test**. Upon completion, a summary of the self-test will be displayed. Use the E8257D/67D PSG Service Guide to troubleshoot any failures detected by the test.

NOTE Some circuits may require up to 50 minutes to warm up before passing the self-test. If self-tests continue to fail after 50 minutes of warm up, troubleshoot the instrument.

3. Check to see if the **ERR** annunciator is on.
 - If the **ERR** annunciator is on, review the error messages in the error queue by pressing **Utility > Error Info**. The first page of error messages in the error queue appears in the display text area. (Refer to the signal generator error messages document for information about each error message.)

After resolving all problems causing errors, press **Clear Error Queue(s)**.
 - If the **ERR** annunciator is off, the signal generator functionality check has passed.

Remove the Outer and Inner Signal Generator Covers

Remove the Outer Cover

Refer to [Figure 1](#).

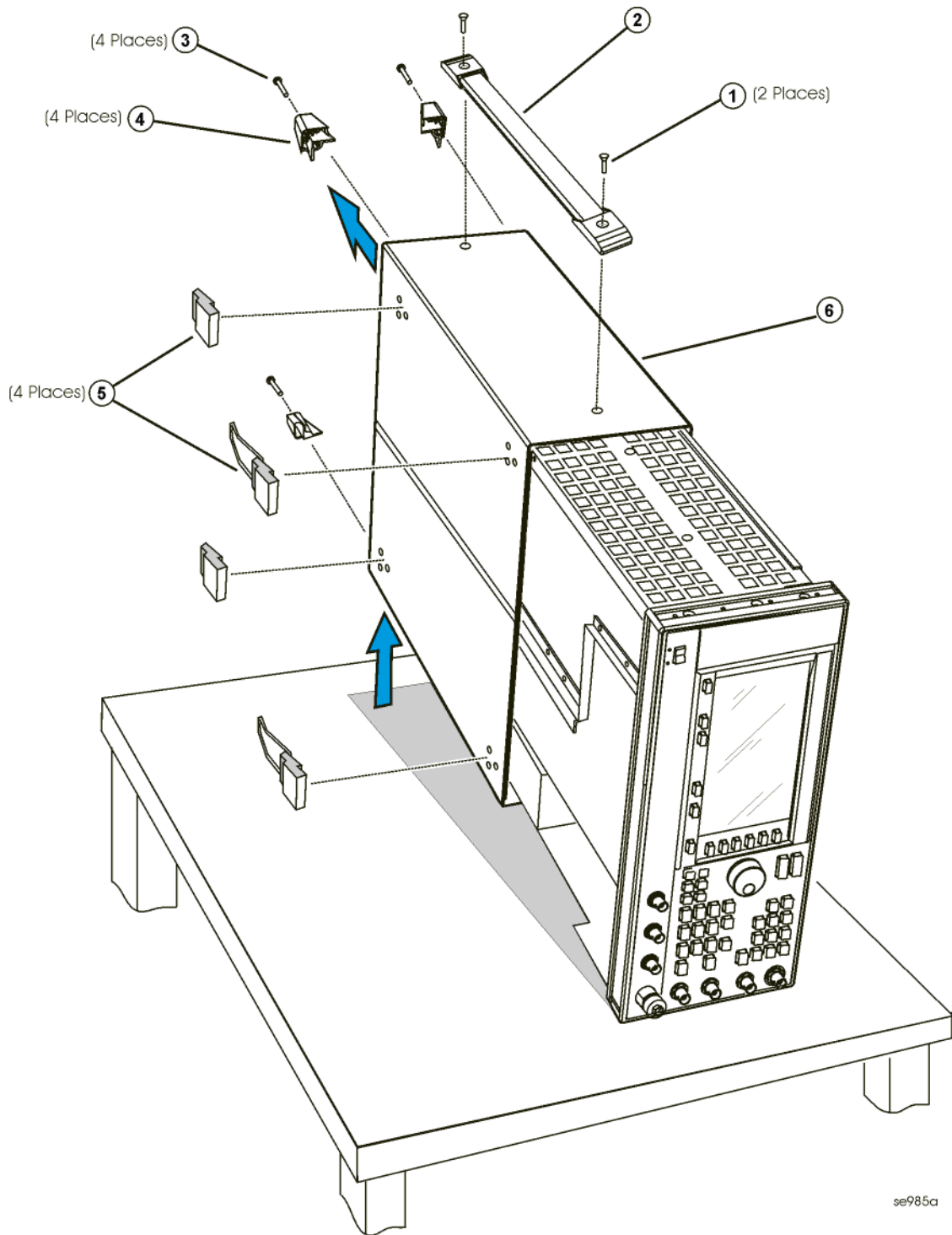
1. Disconnect the power cord.
2. Using a T-20 driver, loosen the two screws (1) and remove the strap handle (2).
3. Using a T-15 driver, remove the center screws (3) on the four rear-panel feet (4).
4. Remove the four bottom feet (5) from the cover by lifting the tab and sliding the foot toward the tab.
5. Place the signal generator on its side.
6. Tilt the signal generator forward and slide the outer cover (6) back to remove it from the frame.

Remove the Inner Top Cover

Refer to [Figure 2](#).

1. Using a T-10 driver, remove the eleven screws (1) from the inner-top cover (2).
2. Remove the inner-top cover.

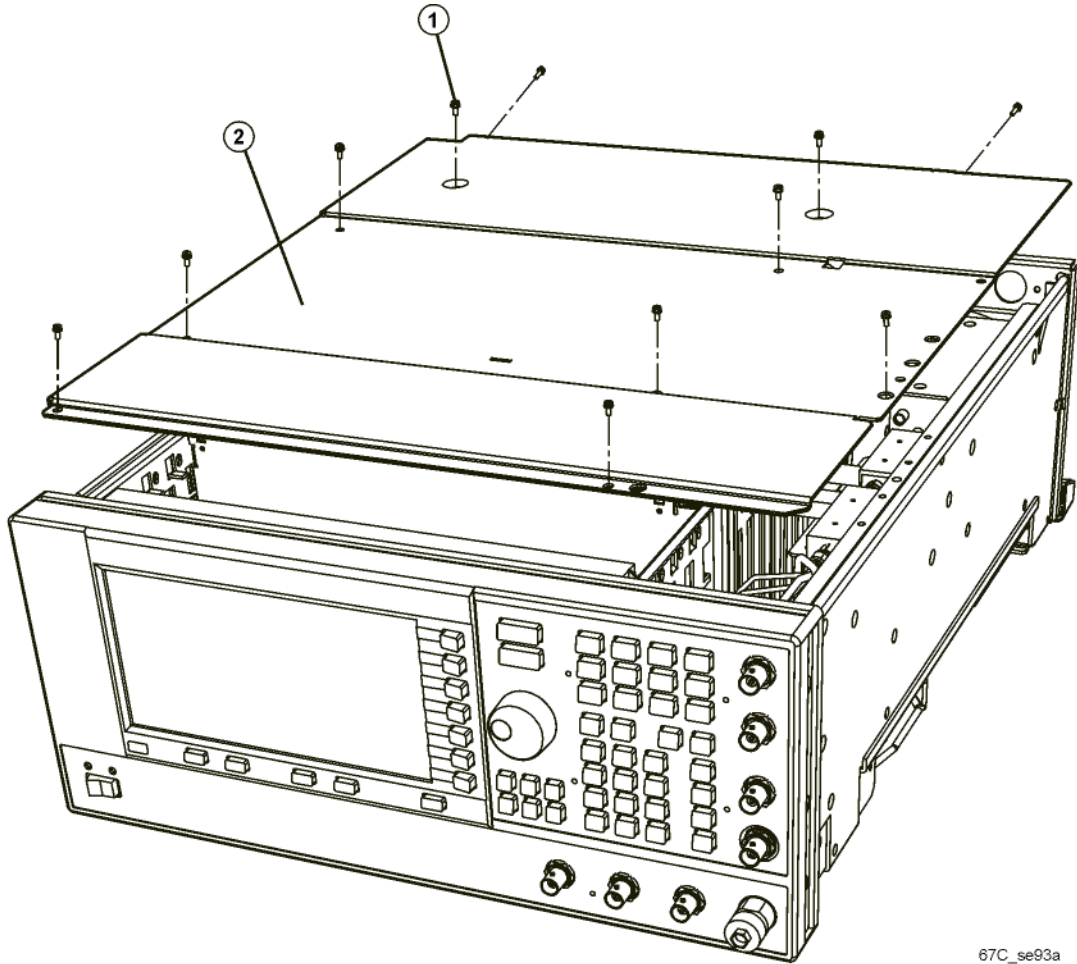
Figure 1 **Outer Cover Removal**



se985a

Figure 2

Inner Top Cover Removal



67C_se93a

Replace the A14 Digital Bus Baseband Generator Board

NOTE If this upgrade kit is being used for the original installation of an A14 Digital Bus Baseband Generator board, skip steps 1 thru 4.

Refer to [Figure 3](#).

1. Using the needle-nose pliers, disconnect the W65 flexible cable from A14J800.
2. Disconnect the W64 ribbon cable from A14J13
3. Lift the retention levers and disconnect the A14 Digital Bus Baseband Generator Board from the A31 Motherboard.
4. Lift the A14 Digital Bus Baseband Generator Board out of the card cage guides.
5. Insert the new A14 Digital Bus Baseband Generator board into the card cage guides.
6. Connect the W90 cable end with foam attached to it, to A14J21.
7. Install the A14 Digital Bus Baseband Generator board onto the A31 motherboard.

NOTE Skip step 8 if W65 is already installed on the rear panel.

8. Install the W65 cable to the rear panel slot labeled "BASEBAND GEN REF IN." Use a lock washer and a hex-nut to secure one end of the cable to the rear panel. Torque the hex-nut to 21 in-lb.
9. Connect the loose end of the W65 cable to A14J800.
10. Connect the W64 ribbon cable to A14J13.

Figure 3

A14 Internal Baseband Generator Board



W64/A14J13

A14

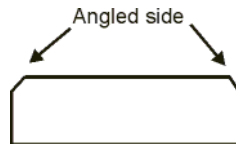
W90/A14J21

W65/A14J800

Install the Digital Bus Cable

1. Refer to [Figure 4](#). Connect the loose end of W90 to A17P1 on the A17 Baseband Generator Interface Board.

CAUTION Make sure the angled side of the cable connector on W90 is facing up.



Failure to do so could result in damage to the A17 Rear Panel Interface Board connector.

Figure 4 A14 Digital Bus Baseband Generator Board



Activate Option 601/602

1. Follow the instructions on the Entitlement Certificate.

Verify Proper Installation of Option 601/602

1. Turn the signal generator on.
2. Check that Option 601/602 is installed by pressing **Utility > Instrument Info/Help Mode > Options Info**.
3. Perform the “Checking Signal Generator Functionality” procedure, as described on [page 5](#).
4. Verify that the Baseband Generator self-tests all pass.

Re-Assemble the Signal Generator

Refer to [Figure 1](#).

1. Reinstall the inner and outer instrument covers by reversing the order for removal.
2. Torque all T-10 screws to 9 in-lbs.
3. Torque all T-15 and T-20 screws to 21 in-lbs.
4. Attach the Digital Bus label over “DIG I/Q I/O” on the rear panel.

Run the I/Q Calibration

1. Turn the instrument on and let it warm up for 30 minutes.
2. Press: **I/Q > I/Q Calibration > Calibration Type Full > Execute Cal**

Verify Signal Generator Calibration

The new baseband generator will function properly in most applications, without re-calibrating the signal generator. If error vector magnitude (EVM) is critical to the application, the following adjustment/performance tests are recommended. Refer to the PSG Family Signal Generators Calibration Software:

1. Self Test
2. I/Q Prelevel Gain Mixer Bias, and Digital Gain Cal
3. I/Q Impairment Calibration
4. EVM and IQ Offset
5. External Digital Modulation Level Accuracy Relative to CW
6. Dual Arbitrary Waveform Generator Check